FORM PTO-1449 (Modified) U.S. Department of Commerce Patent and Trademark Office Attorney Docket No.: PRMG-04578

Serial No.: 09/641,319

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use Several Sheets If Necessary)

Applicant: Michael R. Slater et al.

(37 CFR § 1.98(b))

Filing Date: 08/18/00

Group Art Unit:

			U.S	S. PATENT DOCUMENTS		,	
Examiner Initials	Çite No.	Serial / Patent Number	Issue Date	Applicant / Patentee	Class	Subclass	Filing Date
SH JC	20	4.889,818	12/24/89	Gelfand et al.	435	194	6/17/87
KK	草	5,352,600	10/4 '94	Gelfand et al.	526	27	5/15/90
10	NA COETA	5,079,352	1/7.92	Geltand et al.	435	194	11/5/92
*	HWY	5,210,036	5/11/93	Comb et al.	435	194	4 26/90
PANENTAT	AAD 5	5,322,785	6/21/94	Comb ct al.	435	194	4.17/91
	6	4,683,195	7/28:87	Mullis et al.	435	6	2/7/86
	7	4,683,202	6/28/87	Mullis	435	91	10/25,85
	8	4,965,188	10/23/90	Mullis <i>et al</i> .	435	6	6.17/87
	9	5,322,770	6 21 94	Celfand	435	6	12/22/89
	10	5,075,216	12/24/91	Innis et al.	435	6	9,23/88
	11	5,324,637	6'28'94	Thompson et al.	435	98.1	11/9/93
	12	5,498,523	3/12/96	Tabor et al.	435	6	7/14/94
	13	5,455,170	12/14/93	Abiamson et al.	435	7.37	10/16/91
	14	5,491,086	2 13 96	Gelfand et al.	435	194	5/14/93
	15	5,466,591	11/14/95	Abramson et al.	435	194	2/23/93
	16	5,420,029	5 30 95	Gelfand et al.	435	194	2/3/93
	17	5,374,553	12/20/94	Geifand et al.	435	252.3	8/13/90
	18	5,338,671	8 16 94	Scalice et al.	435	91.2	10/7/92
	19	5,409,811	4 25 95	Tabor et al.	435	6	4/16/92
	20	5,405,774	4 11 95	Abramson et al.	435	252.3	9/10/93
	21	4,962,020	10/9/90	Tabor et al	435	6	7 '2/88
	22	6,077,664	6/2/00	Slater et al.	435	6	5/31/96
	23	5,980,890	11/9-99	Dong et al.	424	94.6	2/25/97
	24	5,861,295	1 19 99	Goldstein et al.	435	194	1/2/97
(H)	25	5,939,301	8.17.99	Hughes, Jr. et al.	435	194	10/2/95
RH	26	5,912,155	6.15.99	Chatterjee et al.	435	194	1 9/95
	27	5,948,614	0/7/49	Chatterjee	435	6	0 6,06
	28	5,624,833	4, 29, 97	Gelfand et al.	435	194	6.7/95
	29	6,015,668	1.18/00	Hughes et al.	435	6	9.6/96
	30	5,614,365	3/27/97	Tabor et al.	435	6	11/10/94
	31	5,047,342	9/10/91	(hatterjee	435	194	8/10/89
4	32	B17841)	12/22/92	Tabor et al.	435	91	4/12/91

EXAMINER:

Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 U.S. Department of Commerce Attorney Docket No.: PRMG-04578 Serial No.: 09/641,319 Patent and Trademark Office (Modified) Applicant: Michael R. Slater et al. INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use Several Sheets If Necessary) Filing Date: 08/18/00 Group Art Unit: (37 CFR § 1.98(b)) U.S. PATENT DOCUMENTS Serial / Patent Examiner Cite Subclass Filing Date Class Applicant / Patentee Issue Date Number Initials No 435 7/37 10/16/91 5,270,170 12/24/93 Schatz et al. 1/28/92 435 69.1 5,270,179 12/14/93 Chatterjee FOREIGN PATENTS OR PUBLISHED FOREIGN PATENT APPLICATIONS Translation Document Subclass Class Country / Patent Office Publication Date Number Yes No 2/3/88 ΕP 258,017 35 24/11/94 36 WO 94/26766 37 WO 92/06188 16/4/92 38 WO 89/06691 27/7/89 39 WO 92/03556 5/3/92 WO 92/06200 16/4/92 40 WO 91/09950 11/7/91 41 WO 91/09944 11/7/91 42 WO 92/09689 43 11/6/92 44 WO 96/10640 45 EP 655,506 46 WO 94/05797 47 WO 93/25706 48 EP 371,437 49 2,127,188 50 WO 92/06202 ΕP 6/7/89 51 EP 351,138 24/12/87 EΡ 52 386,859 ΕP 24/12/98 53 516,245 54 WO 90/08839 9/8/90 55 WO 91/02090 21/2/91 56 WP 91/16446 31/10/91 57 WO 93/02212 4/2/93 Date Considered: Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form EXAMINER: with next communication to applicant.

FORM PTO-1449 (Modified)

U.S. Department of Commerce Patent and Trademark Office

Attorney Docket No.: PRMG-04578

Applicant: Michael R. Slater et al.

Serial No.: 09/641,319

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

with next communication to applicant.

	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(Use Several Sheets If Necessary)	- 11				
7 CFR § 1.9	8(b))	(Ose Servial Sheets in Accessiny)	Filing Date: 08/18/00	Group Art Unit:			
		OTHER DOCUMENTS (Including Author, Title, I	Date, Relevant Pages, Place of Publication)				
RY	58	Huber et al. "Validation of the Publication of New Names and J. Syst. Bacteriol., 36:575 (1986);	d New Combinations Previously Effectively	Published Outside the IJSB," Int			
(59	Jannasch et al., "Thermotoga neapolitana sp. nov. of the Extr 150:103-104 (1986);	e Extremely Thermophilic, Eubacterial Genus Thermotoga," Arch. Microbiol.,				
PE	SC.	Jannasch et al., "Validation of the Publication of New Names Int. J. Syst. Bacteriol., 39:93 (1989)	Validation of the Publication of New Names and New Combinations Previously Effectively Published Outside the IJSB," priol., 39:93 (1989)				
Windberger et al., "Thermotoga thermarum sp. nov. and Thermotoga neapolitana Occurring in African Continental Arch. Microbiol., 151:506-512 (1989)							
Acres 1	CENTE	Windberger, et al "Validation of the Publication of New Nat IJSB," Int. J. Syst. Bacteriol., 42:327 (1992)	mes and New Combinations Previously Effe	ectively Published Outside the			
CAT & IR	63	Holt et al., (eds), Bergey's Manual® of Determinative Bacter	riology, 9th ed., Williams & Wilkins, Baltin	more, (1994), p. 333;			
	64	Ng and Kenealy, "Industrial Applications of Thermostable Enzymes," in T.D. Brock (cd.), Thermophiles: General, Molecular, and Applied Microbiology, (1986), John Wiley & Sons, New York, pp. 197-215					
	65	Bessman et al., "Enzymatic Synthesis of Deoxyribonucleic Acid," J. Biol. Chem. 223:171 (1957);					
	66	Buttin and Komberg, "Enzymatic Synthesis of Deoxyribonucleic Acid." J. Biol. Chem. 241:5419 (1966);					
	67	Joyce and Steitz, "DNA Polymerase 1 From Crystal Structure to Function Genetics," Trends Biochem. Sci., 12:288-292 (1987);					
	68	Stenesh and McGowan, "DNA Polymerase from Mesophilic and Thermophilic Bacteria," <i>Biochim. Biophys. Acta</i> 475:32-44 (1977)					
	69 Stenesh and Roe, "DNA Polymerase from Mesophilic and Thermophilic Bacteria," <i>Biochim. Biophys. Acta</i> 272:156-166 (
	70	Low et al., "Purification and Characterization of DNA Polymerase III from Bacillus subtilis," J. Biol. Chem., 251:1311 (1976);					
	71		"Cloning and Characterization of the polC Region of Bacillus subtilis." J. Bacteriol., 165:951 (1986);				
	72	Harwood et al., "Microcroccus luteus Deoxyribonucleic Acid Polymerase," J. Biol. Chem., 245:5614 (1970)					
	73	Hamilton and Grossman, "Enzymatic Repair of Deoxribonucleic Acid: The Biochemical and Biological Repair Properties of a Evexyribonucleic Acid Polymerase from <i>Micrococus luteus</i> ," <i>Biochem.</i> , 13:1885 (1974);					
	74	Lopez et al., "Characterization of the polA Gene of Streptococcus pneumoniae and Comparison of the DNA Polymerase I It Encodes to Homologous Enzymes from Escherichia coli and Phage T7," J. Biol. Chem., 264(7):4255-4263 (1989)					
	75	Fingler and Bessman, "Characterization of a Mutator DNA Polymerase I from Salmonella typhimurium," Cold Spring Harbor Symp., 43:929 (1979);					
	76	Kaledin et al., "Isolation and Properties of DNA Polymerase from Extremely Thermophillic Bacterium Thermus aquaticus YT1," Biochem., 45:494-501 (1980); Biokhimiya 45:644-651 (1980);					
	77	Chien et al., "Deoxyribonucleic Acid Polymerase from the Extreme Thermophile Thermus aquaticus," J. Bacteriol., 127:1550-1557 (1976)					
	78	University of Cincinnati Master's thesis by A. Chien, "Purification and Characterization of DNA Polymerase from <i>Thermus aquaticus</i> ," (1976);					
	79	University of Cincinnati, Master's thesis by D. B. Edgar, "DN	NA Polymerase From an Extreme Thermoph	ile: Thermus aquaticus," (1974);			
	80	Simpson et al., "Purification and Some Properties of a Therm 68:1292-1296 (1990)	nostable DNA Polymerase from a Thermotog	ga Species," Biochem. Cell Biol.,			
	81	Myers and D.H. Gelfand, "Reverse Transcription and DNA A 30(31):7601-7666 (1991).	amplification by a Thermus thermophilus Di	NA Polymerase," Biochem.,			
	82	Bechtereva et al., "DNA Sequencing with Thermostable Tet I 17(24):10507 (1989)	DNA Polymerase from Thermus thermophili	us," Nucleic Acids Res.,			
H	83	Glykhov et al., "Amplification of DNA Sequences of Epstein- Thermy the modellus," Mol. Cell. Probes 4:435-443 (1990);		s Using DNA-Polymerase from			
aminer:	7	nellet by	Date Considered: Slais				

FORM PTO-1449 (Modified)

J.S. Department of Commerce Patent and Trademark Office

RMG-04578 Attorney Docket No.

Serial No.: 09/641,319

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Applicant: Michael R. Slater et al.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use Several Sheets If Necessary)			Applicant: Michael R. Slater et al.				
37 CFR § 1.9	98(b))	(Ose Several Sheets II Necessary)	Filing Date: 08/18/00	Group Art Unit:			
		OTHER DOCUMENTS (Including Author, Title, Da	ate, Relevant Pages, Place of Publication)				
RY	84	Carballeira et al., "Purification of a Thermostable DNA Polym Reaction," BioTech., 9:276-281 (1990).	erase from Thermus thermophilus HB8, U	seful in the Polymerase Chain			
(85	Ruttiman et al., "DNA Polymerases from the Extremely Therm (1985);	rmophilic Bacterium Thermus thermophilus HB-8," Eur. J. Biochem., 149:41-4				
	86	Oshima et al., "Physichemical Properties of Deoxyribnucleic A	acid from an Extreme Thermophile," J. Bio	ochem., 75:179-183 (1974)			
DE JC,	87	Sakaguchi and Y. Yajima, "Thermophilic and Stable DNA Pol	ymerase from Thermus thermophilus," Fee	d. Proc., 33:1492 (1974);			
791	<u> </u>	Kaledin et al., "Isolation and Properties of DNA Polymerase from the Extremely Thermophilic Bacterium <i>Thermus flavus</i> ," <i>Biochem.</i> , 46(9):1247-1254 (1981); Biokhimiya 46:1576-1584 (1981);					
KW,	JO KILL	Kaledin et al., "Isolation and Properties of DNA Polymerase from the Extremely Thermophilic Bacterium Thermus ruber," Biochem., 47(11):1515-1521 (1982). Biokhimiya 47:1785-1791 (1982)					
FAT & TRAD	90	Hamal et al., "Purification and Characterization of a DNA Polymerase from the Archaebacterium Thermoplasma acidophilum," Eur. J. Biochem., 190:517-521 (1990);					
	91	Forterre et al., "Studies on DNA Polymerases and Topoisomer	ases in Archaebacteria," Can. J. Microbiol	., 35:228-233 (1989);			
	92	Replication at Hight Temperature of Long	g Stretches of Single-Stranded				
	93	Salhi et al "The DNA Polymerase from the Archaebacterium Sulfolubus Acidocaldarius: A Thermophilic and Thermoresistant E which can Perform Automated Polymerase Chain Reaction," Biochem. Biophys. Res. Comm., 167(3):1341-1347 (1990);					
	Rella et al., "Purification and Properties of a Thermophilic and Thermostable DNA Polymerase from the Archaebacteriu Solfataricus," Ital. J. Biochem., 39:83-99 (1990);						
	95	Rossi et al., "Structure and Properties of a Thermophilic and T Appl. Microbiol., 7:337-341 (1986);	hermostable DNA Polymerase Isolated from	om Sulfolobus solfataricus," System			
	96	Klimczak et al., "Purification and Characterization of DNA Po Res., 13(14):5269-5282 (1985);	lymerase from the Archaebacterium Sulfol	obus acidocaldarius," Nucleic Acia			
	97 Elic et al., "A DNA Polymerase from a Thermoacidophi Acta 951 261-267 (1988)		chaebacterium: Evolutionary and Technol-	ogical Interests," Biochim. Biophys			
	98	Uemori et al., "Cloning of the DNA Polymerase Gene of <i>Bacil</i> 113 401-410 (1993).	llus caldotenax and Characterization of the	Gene Product," J. Biochem.,			
	99	Sellman et al., "Punfication and Characterization of DNA Poly	Polymerases from Bacillus Species," J. Bacteriol. 174(13):4350-4355 (1992);				
	100	Kaboev et al., "Purification and Properties of Deoxyribonucleic 145(1):21-26 (1981);	e Acid Polymerase from Bacillus stearothe	ermophilus," J. Bacteriol.,			
	101	Klimczak et al., "Purification and Characterization of DNA Po- Biochem., 25(17):4850-4855 (1986);	lymerase from the Archaebacterium Metha	nobacterium thermoautotrophicum			
	102	Kong et al., "Characterization of a DNA Polymerase from the (1993)	Hyperthermophile Archaea Thermococcus	litorali," J. Biol. Chem. 268:1965			
	103	Lundberg ct al., "High-fidelity Amplification Using a Thermos (1991);	table DNA Polymerase Isolated From Pyro	ococcus furiosus," Gene 108:1			
	104	Bankier, "Dideoxy Sequencing Reactions Using Klenow Fragm Biology: DNA Sequencing Protocols, Humana Press, Totowa,		ffin (eds.), Methods in Molecular			
	105	Lawyer et al., "Isolation, Characterization, and Expression in E. Journ. Bio. Chem. 264(11):6427-6437 (1989);	Escherichia coh of the DNA Polymerase G	ene from Thermus aquaticus*,"			
	106	Lawyer et al., "High-Level Expression, Purification, and Enzyla Truncated Form Deficient in 5' to 3' Exonuclease Activity,"	matic Characterization of Full-length <i>Therr</i> PCR Meth. Appl., 2:275-287 (1993);	nus aquaticus DNA Polymerase ar			
RK	107	Andreon Ja B. Yoyng, Quantitative Filter Hybridization, in /					
xaminer:		Lilli All	Date Considered: 8/6/03				
XAMINER:		itial citation considered. Draw line through citation if not in confi th next communication to applicant.	ormance and not considered. Include cop-	y of this form			

U.S. Department of Commerce FORM PTO-1449 Serial No.: 09/641,319 Attorney Docket No.: PRMG-04578 (Modified) Patent and Trademark Office INFORMATION DISCLOSURE STATEMENT BY APPLICANT Applicant: Michael R. Slater et al. (Use Several Sheets If Necessary) Group Art Unit: Filing Date: 08/18/00 (37 CFR § 1.98(b)) OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication) Kacian et al., "A Replicating RNA Molecule Suitable for a Detailed Analysis of Extracellular Evolution and Replication," Proc. Natl. Acad. 108 Sci USA 69(10):3038-3042 (1972) 109 Chamberlin et al., "New RNA Polymerase from Escherichia coli Infected with Bacteriophage T7," Nature 228 227-231 (1970) Wu and Wallace, "The Ligation Amplification Reaction (LAR) - Amplification of Specific DNA Sequences Using Sequential Rounds of 110 Template-Dependent Ligation," Genomics 4:560-569 (1989); 111 Erlich (ed.) PCR Technology (Stockton Press 1989); Maniatis et al., "Regulation of Inducible and Tissue-Specific Gene Expression," Science 236:1237-1245 (1987); 112 Voss et al., "The Role of Enhancers in the Regulation of Cell-Type-Specific Transcriptional Control." Trends Biochem. Sci., 11:287-289 113 Dijkema et al., "Cloning and Expression of the Chromosomal Immune Interferon Gene of the Rat," EMBO J. 4(3):761-767 (1985); 114 Uetsuki et al., "Isolation and Characterization of the Human Chromosomal Gene for Polypeptide Chain Elongation Factor-Iα," J. Biol. 115 Chem., 264(10):5791-5798 (1989); Kim et al., "Use of the Human Elogation Factor 10 Promoter as a Versatile and Efficient Expression System," Gene 91:217-223 (1990); 116 Mizushima and S. Nagata, "pEF-BOS, a Powerful Mammalian Expression Vector," Nuc. Acids. Res., 18(17):5322 (1990); 117 Gorman, et al., "The Rous Sarcoma Virus Long Terminal Repeat is a Strong Promoter when Introduced into a Variety of Eukaryotic Cells 118 by DNA-Mediated Transfection," Proc. Natl. Acad. Sci. USA 79:6777-6781 (1982); Boshart, et al., "A Very Strong Enhancer is Located Upstream of an Immediate Early Gene of Human Cytomegalovirus," Cell 41:521-530 119 Sambrook et al., Molecular Cloning: A Laboratory Manual, 2nd ed., Cold Spring Harbor Laboratory Press, New York (1989) pp. 16.7-120 121 Komberg, DNA Repliation, W.H. Freeman and Co., San Francisco, pp. 127-139 (1980) 122 Tindall and T.A. Kunkell, "Fidelity of DNA Synthesis by the Thermus Aquaticus DNA Polymerase," Biochem 27:6008-6013 (1988); Brutlag et al., "An Active Fragment of DNA Polymerase Produced By Proteolytic Cleavage," Biochem. Biophys. Res. Commun. 37:982 123 (1969)Erlich et al., "Recent Advances in the Polymerase Chain Reaction," Science 252:1643-1651 (1991); 124 Bebenek et al., "The Fidelity of DNA Synthesis Catalyzed by Derivatives of Escherichia coli DNA Polymerase 1*," J. Biol. Chem. 125 265(23):13878-13887 (1990) Bames, "The Fidelity of Taq Polymerase Catalyzing PCR is Improved by an N-Terminal Deletion," Gene 112:29 (1992); 126 Bernad et al. "A Conserved 3' → 5' Exonuclease Active Site in Prokaryotic and Fukaryotic DNA Polymerases," Cell 59:219-228 (1989); 127 Derbyshire et al., "The 3'-5' Exonuclease of DNA Polymerase I of Escherichia coli: Contribution of Each Amino Acid at the Active Site to 128 the Reaction," EMBO J. 10(1):17-24 (1991); Maxam and Gilbert, "A New Method for Sequencing DNA," Proc. Natl. Acad. Sci. USA 74:560 (1977); 129 Sanger et al., "DNA Sequencing with Chain-Terminating Inhibitors," Proc. Natl. Acad. Sci USA 74(12):5463-5467 (1977); 130 Heiner et al. Applied Biosystems, Inc., DNA Sequencer Model 370 User- Bulletin Taq Polymerase: "Increased Enzyme Versatility in DNA 131 Sequencing," (1988); Mizusawa et al., "Improvement of the Dideoxy Chain Termination Method of DNA Sequencing by Use of Deoxy-7-deazaguanosine 132 Triphosphate in Place of dGTP," Nucl. Acids Res. 14:1319 (1986); Innis et al., "DNA Sequencing with Thermus aquaticus DNA Polymerase and Direct Sequencing of Polymerase Chain Reaction-Amplified 133 DNA," Proc. Natl. Acad. Sci USA 85:9436-9440 (1988); Barr et al., "7-Deaga-22-Deoxyguanosine-5" -Triphosphate: Enhanced Resolution in M13 Dideoxy Sequencing," Biotechniques 4:428 134 (1986);Date Considered: Examiner Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form EXAMINER: with next communication to applicant.

U.S. Department of Commerce FORM PTO-1449 Attorney Docket No.: PRMG-04578 Serial No.: 09/641,319 Patent and Trademark Office (Modified) INFORMATION DISCLOSURE STATEMENT BY APPLICANT Applicant: Michael R. Slater et al. (Use Several Sheets If Necessary) Group Art Unit: Filing Date: 08/18/00 (37 CFR § 1.98(b)) OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication) Sambrook et al., Molecular Cloning: A Laboratory Manual, 2nd ed., Cold Spring Harbor Laboratory Press, NY (1989) pp. 6:30-6:31 R K 135 Ausubel et al., Eds. Short Protocols in Molecular Biology, 2nd ed. (1992) John Wiley & Sons, New York, pp. 7-8 to 7-16 and 7-29 and 7-136 Matthews, "Structural and Genetic Analysis of Protein Stability," Ann. Rev. Biochem. 62:139 (1993); 137 **6**, 138 Frey and Suppmann, "Demonstration of the Expanders PCR System's Greater Fidelity and Higher Yields with a lact-based PCR Fidelity Assay," Biochemica 2:8 (1995); Kechavong and W.G. Thilly, "Fidelity of DNA Polymerases in DNA Amplification," Proc. Natl. Acad. Sci. USA 86:9253-9257 (1989) Provost et al. "Transgenic Systems for In Vivo Mutation Analysis," Mut. Research 288:133 (1993). **7**40 AT & TRAD 141 Black, Microbiology Principles and Applications, 2d edition, Prentice Hall, New Jersey, (1993) p. 145-146 Brock (ed.), Thermophiles: General, Molecular and Applied Microbiology, John Wiley & Sons, New York (1986), pp. 1-16 142 Huber et al., "Thermotoga maritima sp. nov. Represents a New Genus of Unique Extremely Thermophilic Eubacteria Growing up to 90 C," 143 Arch. Microbiol. 144:324-333 (1986) Reeve et al., "A novel thermostable polymerase for DNA sequencing," Nature, 376:796-797 (1995) 144 Brandis et al., "Slow Rate of Phosphodiester Bond Formation Accounts for the Strong Bias that Taq DNA Polymerase Shows against 2',3'-145 Dideoxynucleotide Terminators," Biochemistry, 35:2189-2200 (1996); Kim et al., "Crystal Structure of Thermus aquaticus DNA polymerase," Nature, 376:612-616 (1995); 146 Lawyer et al., "The DNA Polynierase I Gene from the Extreme Thermophile, Thermotoga maritima: Identification, Cloning, and 147 Expression of Full-Length and Truncated Forms in Escherichia coli," 92nd Gen Mtg. of Am Soc. for Microbiology, H-104:200 (1992); Papanicolaou et al., "Polymerase-specific Differences in the DNA Intermediates of Frameshift Mutagenesis: In vitro Synthesis Errors of 148 Escherichia voli DNA Polymerase I and its I arge Fragment Derivative," J. Mol. Biol, 207:335-353 (1989); Barnes, "PCR amplification of up to 35-kb DNA with high fidelity and high yield from λ bacteriophage templates," Proc. Natl. Acad. Sci. 149 91:2216-2220 (1994); Windberger et al., Arch. Microbiol. 151:506-512 (1989). 150 Slater, M.R. et al., "DNA Polymerase I of Thermus neapolitane (Tne) and Mutant Derivatives," (Abstract) Seventh International Genome 151 Sequencing and Analysis Conference, Sep. 1995 Schlesinger et al., "Inclusion of OmniBase Enzyme mix in reaction cocktails facilitates sequencing templates with strong secondary 152 structure," (Abstract) The Fidelity of DNA replication, Wrightsville Beach, Sept 10-15, 1995. Jannasch et al., "Thermotoga neapolitana sp. nov. of the Extremely Thermophilic, Eubacterial Genus Thermotoga," Archives of 153 Microbiology 150(1):103-104 (1988) Astatke, M. et al., "Deoxynucleoside Triphosphate and Pyrophosphate Binding Site in the Catalytically Competent Temary Complex for the 154 Polymerase Reaction Catalyzed by DNA Polymerase I (Klenow Fragment)," J. Biol. Chem. 270(4):1945-1954 (Jan. 1995) Basu, A. and Modak, M.I., "Identification and Amino Acid Sequence of the Deoxynucleoside Triphosphate Binding Site in Escherichia coli 155 DNA Polymerase 1," Biochemistry 26:1704-1709 (1987) Beese, L.S. et al., "Crystal Structures of the Klenow Fragment of DNA Polymerase I Complexed with Deoxynucleosides Triphosphate and 156 Pyrophosphate." Biochemistry 32:14095-14101 (1993) Blanco, L. et al., "Evidence favouring the hypothesis of a conserved 3'-5' exonuclease active site in DNA-dependent DNA polymerases," 157 Géne 112:139-144 (1992) Braithwaite, D.K. and Ito, J., "Compilation, alignment, and phylogenetic relationships of DNA polymerases," Nucleic Acids Res. 158 21(4):787-802 (1993) 159 Carroll, S.S. et al., "A Mutant of DNA Polymerase I (Klenow Fragment) with Reduced Fidelity," Biochemistry 30:804-813 (1991) Das, S.K. and Fujimura, R.K., "Processiveness of DNA Polymerases: A Comparative Study Using a Simple Procedure," J. Biol. Chem. 160 254(4);**272**7 Date Considered: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form EXAMINER: with next communication to applicant

U.S. Department of Commerce FORM PTO-1449 Serial No.: 09/641,319 Attorney Docket No.: PRMG-04578 Patent and Trademark Office (Modified) INFORMATION DISCLOSURE STATEMENT BY APPLICANT Applicant: Michael R. Slater et al. (Use Several Sheets If Necessary) Group Art Unit: Filing Date: 08/18/00 (37 CFR § 1.98(b)) OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication) Delarue, M. et al., "An attempt to unify the structure of polymerases," Prot. Engin. 3(6):461-467 (1990) 161 Donlin, M.J. and Johnson, K.A., "Mutants Affecting Nucleotide Recognition by T7 DNA Polymerase," Biochemistry 33:14908-14917 (Dec. 162 Dunn, J.J. and Studier, F.W., "Complete Nucleotide Sequence of Bacteriophage T7 DNA and the Locations of the T7 Genetic Elements," J. 163 Mol. Biol. 166:477-535 (1983) Joyce, C.M. et al., "Nucleotide Sequence of the Escherichia coli polA Gene and Primary Structure of DNA Polymerase I," J. Biol. Chem. 257(4):1958-1964 (1982) Joyce, C.M., "Can DNA polymerase I (Klenow Fragment) serve as a model for other polymerases?" Curr. Opin. Struct. Biol. 1(1):123-129 Freemont, P.S. et al., "A Domain of the Klenow Fragment of Escherichia coli DNA Polymerase I Had Polymerase but No Exonuclease ATENTE 166 Activity," Proteins: Struct. Funct. Genet. 1 66-73 (1986) Fujimura, R.K. and Roop, B.C., "Characterization of DNA Polymerase Induced by Bacteriophage T5 with DNA Containing Single Stranded Breaks," J. Biol. Chem. 251(7):2168-2175 (1976) 163 Fujimura, R.K. et al., "Physical Locus of the DNA Polymerase Gene and Genetic Maps of Bacteriophage T5 Mutants," J. Virology 168 53(2):495-500 (1985) Gutman, P.D. and Minton, K.W., "Conserved sites in the 5'-3' exonuclease domain of Escherichia coli DNA polymerase," Nucleic Acids 169 Res 21(18):4406-4407 (1993) Ito, J. and Braithwaite, D.K., "Compilation and alignment of DNA polymerase sequences," Nucleic Acids Res. 19(15):4045-4057 (1991) 170 Joyce, C.M. and Steitz, T.A., "Function and Structure Relationships in DNA Polymerases," Annu. Rev. Biochem. 63:777-822 (Jul. 1994) 171 Leavitt, M.C. et al., "T5 DNA polymerase: Structural-functional relationships to other DNA polymerases," Proc. Natl. Acad. Sci. USA 172 86:4465-4469 (1989) Ollis, D.L. et al., "Structure of Large tragment of Escherichia coli DNA polymerase I complexed with dTMP," Nature 313:762-766 (1985) 173 Pandey, V.N. et al., "Role of Lysine 758 of Eschenchia coli DNA Polymerase Las Assessed by Site-directed Mutagenesis," J. Biol. Chem. 174 269(18):13259-13265 (May 1994) Pelletier, H. et al., "Structures of Ternary Complexes of Rat DNA Polymerase β, a DNA Template-Primer, and ddCTP," Science 175 264 1891-1903 (Jun. 1994) Polesky, A.H. et al., "Identification of Residues Critical for the Polymerase Activity of the Klenow Fragment of DNA Polymerase 1 from 176 Escherichia coli," J. Biol. Chem. 265(24):14579-14591 (1990) Prasad, V.R. ct al., "Isolation and characterization of a dideoxyguanosine triphosphate-resistant mutant of human immunodeficiency virus 177 reverse transcriptase," Proc. Natl. Acad. Sci. USA 88:11363-11367 (1991) Reha-Krantz, L.J. et al., "Bacteriophage T4 DNA Polymerase Mutations That Confer Sensitivity to the PP, Analog Phosphonoacetic Acid," J 178 Virology 67(1):60-66 (1993) 179 Rhoades, M., "New Physical Map of Bacteriophage T5 DNA," J. Virology 43(2):566-573 (1982) Sawaya, M.R. et al., "Crystal Structure of Rat DNA Polymerase \(\beta\): Evidence for a Common Polymerase Mechanism," Science 180 264 1930-1935 (Jun. 1994) Song, Q et al., "Mutagenesis of the Glu-89 Residue in Human Immuodeficiency Virus Type 1 (HIV-1) and HIV-2 Reverse Transcriptases: 181 Effects on Nucleoside Analog Resistance," J. Virology 66(12):7568-7571 (1993) Sousa, R. et al., "Crystal structure of bacteriophage T7 RNA polymerase at 3.3 Angstrom resolution," Nature 364:593-599 (1993) 182 Tabor, S. et al., "Escherichia coli Thioredoxin Confers Processivity on the DNA Polymerase Activity of the Gene 5 Protein of 183 Bacteriophage T7," J. Biol Chem. 262(33):16212-16223 (1987) Tabor, S. and Richardson, C.C., "Effect of manganese ions on the incorporation of dideoxynucleotides by bacteriophage T7 DNA 184 polymerase and Escherichia coli DNA polymerase I," Proc. Natl. Acad. Sci. USA 86:4076-4080 (1989) Tabor, S. and Richardson, C.C., "Selective Inactivation of the Exonuclease Activity of Bacteriophage T7 DNA Polymerase by in Vitro 185 Mutagonesis," J. Biol. Chem. 264(11):6447-6458 (1989) PH 6 103 Date Considered: Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form EXAMINER: with next communication to applicant.